Transition to agri-food sustainability, assessing accelerators and triggers for transformation: Case study in Valencia, Spain

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ABSTRACT

The agri-food regime faces urgent structural and ethical challenges to advance towards sustainability; therefore, the search for triggers, accelerators and supports for sustainability transition is of outstanding scientific and social interest. Valencia's agri-food system is challenging the status quo with creative initiatives, self-organisation and a transformative process in agri-food policy, including local food governance and agroecological transition. Through interpretative research combining qualitative methods, this analysis assesses accelerators and reveals the triggers of this process of change in Valencia's agri-food system. The study uses the Urban Transformative Capacity Framework (UTCF), which has been empirically applied to the agri-food system for the first time, in order to understand its scope and limitations. The case study was contextualised with the Multi-Level Perspective (MLP), which provided temporality and a larger scale view. The merging of frameworks revealed specific triggers and dynamics of the pre-development of capacities for transition, involving different actors and levels, in which empowered social movements and their informal governance spaces play a key role. The ultimate purpose of this study is to contribute to local agri-food transition processes, along with focusing priorities for action, actively involving research in the process.

1. Introduction

This study arises from the problems of unsustainability of the dominant agri-food system, where the role of cities has become increasingly relevant in promoting a transition to alternative agri-food systems built around broader social, environmental and ethical principles. This is illustrated by the adherence of more than 210 cities to the Milan Urban Food Policy Pact (MUFPP) — including the city of Valencia — which have publicly affirmed their role in strengthening local and regional food systems (Renting, 2017; MUFPP, 2020).

The increasing size of cities and global economic growth around the urbanisation process increase urban pressure on the environment and rural areas (United Nations, Department of Economic and Social Affairs, Population Division, 2014). The rural environment, in addition to competing for land use, must respond to future projections of population pressure with increased food production (FAO, Food and Agriculture Organization of the United Nations, 2011). Urban sprawl often occurs in areas where formal governance capacity is limited, thereby constraining

biodiversity protection and ecosystem service management (Elmqvist, 2013). This phenomenon of dynamic relationship between urban and rural areas, and between natural, cultural, political and economic elements at the local scale, exposed Valencia's traditional horticultural fields (the *Huerta*) to a chaotic mass expansion of urbanisation, land speculation and environmental degradation (Romero and Melo, 2015). All this has led to the deterioration of the Huerta of Valencia, encouraging land abandonment, the rise of intensive agriculture, forestry and poverty (Melo, 2018).

Taking a systemic view of the social and environmental issues of the agri-food regime and their local relevance, this article takes an in-depth look at the case study of the city of Valencia, which has made incipient but important shifts in its food policy towards local food governance and agroecological transition. The research is inspired by the work of Wolfram (2016), who asked how it was possible to support, accelerate or initiate deliberate processes of transition in cities towards a new paradigm of sustainability. He developed an operational framework for the transition to urban sustainability that identifies 60 accelerating factors,

aggregated into ten interdependent components which include inclusive governance, shared leadership, systemic awareness, sustainability projection, sustainable disruptive initiatives, communities of practice, reflexivity and social learning, coupling of innovation at the policy level, and articulation at different levels of the political-administrative scale. In this study, Wolfram's framework (the Urban Transformative Capacity Framework — UTCF) was applied empirically to the specificity of the agri-food system for the first time, with the aim of ascertaining whether the UTCF is applicable for an assessment of a local agri-food system and what its scope and limitations might be. The final purpose of this study is to support the transition processes towards agri-food sustainability, employing the UTCF as a replicable tool that, on the one hand, facilitates the reflexivity of the various key actors (local administration, academia, social organisations and private enterprise) around the accelerating components of the transition; and on the other hand, identifies the problems and priorities for action (Wolfram, 2016).

The UTCF is a holistic operational framework that integrates various approaches to sustainability transition studies under the umbrella of the socio-technical system perspective (El Bilali, 2018), integrating transitions management and its focus on governance, strategic niche management and socio-technical innovation systems. Transitions management has been applied to grassroots initiatives, identifying them as innovation niches that generate development models under alternative principles which promote transition towards sustainability (Seyfang and Smith, 2007, 2009). These processes promote citizen action and can be identified within the field of social and solidarity economy (Belda-Miquel and Pellicer-Sifres, 2016; Radrigán, 2008; Bretos et al., 2018), and with social movements of agroecology and food sovereignty. Some examples of these practices are initiatives for the associated production or consumption of agroecological food, time banks, social currency initiatives, participatory agroecological guarantee systems (PGS), short agroecological marketing channels, not-for-profit organic cooperative supermarkets and organic food enterprises, which focus on people's well-being over capital.

Social movements are understood here as initiatives that mobilise resistance to existing power structures (Castells, 1997, p. 71; Pesch et al., 2019). The socio-technical innovation perspective relates to the capacity of bottom-up initiatives to contribute to the development of socio-technical alternatives; and the civic participation perspective relates to the capacity of citizens to organise themselves to achieve community goals (Pesch et al., 2019). Addressing both perspectives overcomes the problem of being too instrumental or neglecting the role of technology and innovation in local initiatives (Pesch et al., 2019), so both perspectives are included in this study.

The article is organised as follows: first, theoretical approaches and concepts are presented; second, the research methodology based on an interpretative paradigm is explained in detail; third, the results considering the MLP-UTCF are presented; fourth, the results, scope and limitations of the UTCF are discussed; and finally, the main conclusions of the study are drawn.

2. Theoretical background

2.1. Multi-level perspective: sustainability transitions and agrifood systems

On a theoretical level, this paper focuses on socio-technical systems as one of the main areas of study that have addressed the topic of sustainability transitions in different ways (Chang et al., 2017; Frantzeskaki et al., 2018; Köhler et al., 2019). The socio-technical system approach, especially the multi-level perspective (MLP), which is characterised as a middle-range theory (Geels, 2010), aims to explain transitions as dynamic processes of interaction on three different levels: niche, regime and landscape (Geels, 2004, 2011). This approach emphasises the tension between emerging niches and stabilised regimes as the specific dynamic with the potential to bring about sustainable change through

new sustainable niches and new regime instabilities (Geels, 2002; Geels and Schot, 2007). Furthermore, current developments in the MLP emphasise the importance of radical innovations enacted by multiple social groups in the context of rules and institutions (Geels, 2019). From this institutional perspective, regimes are considered as sets of stabilised rules "in a complex of engineering practices, production process technologies, product characteristics, skills and procedures, ways of handling relevant artifacts and persons, ways of defining problems, all of them embedded in institutions and infrastructures" (Rip and Kemp, 1998, p. 338). . The regime adopted by the different actors and not only provides guidance and orientation to the activities of the different social actors, but also enables coordination and produces a dynamic stability of the socio-technical configuration. While regimes are embedded within landscape, which consist in the overall context of exogenous factors containing deeper structural trends, niches are the locations where radical innovation takes place. They often emerge in protected spaces where actors can engage in rule disruption (Geels, 2004, 2011). Subsequently, it has been recognised that a niche-level approach has potential to bridge gaps between social innovation activities and the political sphere (Seyfang and Smith, 2007).

In line with Gillard et al. (2016), this study also claims that transition approaches have to incorporate social theories where power, politics and social relations are at the core of social change. In addition, shifting power relations among actors have to be conceptualised with an emphasis on the empowering and disempowering processes in order to understand the politics and who is involved in the decision-making processes (Avelino et al., 2016). Similarly, Grin et al. (2010) explain that societies are made of interconnected networks of actors that interact in many ways, at different levels and within diverse social realms. Nevertheless, recognising the important role of governance, power and agency entails accepting that transition processes are shaped and modulated precisely by the interactions between actors within the framework of societal structures (Fischer and Newig, 2016).

The agri-food system is understood as a socio-ecological system (SAPEA, 2020). This system is defined by the complex and multidimensional relations of the ecological and socio-cultural dynamics that not only includes technological and labour market aspects but also political and economic issues . In this complex system, a wide network of actors participate in actions related to agricultural activities, manufacturing, distribution, consumption, disposal and recycling (Ericksen, 2008; Gaitán-Cremaschi et al., 2019). In this way, the agri-food system is under a set of dominant rules that shape the structure and keep the regime going through legal frameworks, cognitive routines and the institutional inertias that include more relevant actors in the system (Geels, 2002; Ingram, 2015).

In accordance with this background of research, over the last decade, agri-food systems have been analysed through several frameworks under sustainability transitions and socio-technical system approaches (Levidow et al., 2014; Maye and Duncan, 2017; Gaitán-Cremaschi et al., 2019; El Bilali, 2018; SAPEA, 2020). The MLP is the most prominent framework in agri-food system research in transition studies. However, current studies on MLP applications reveal that new elements are required to provide meaningful results related to the particular processes that take place in agri-food systems (El Bilali, 2019). In this sense, these studies highlighted a general concept development of the three levels in terms of operational application and interaction between them (Chang et al., 2017; El Bilali, 2019). Nevertheless, previous case studies in Europe have established that greater policy involvement processes produce windows of opportunity for sustainability transitions in agri-food policy agendas; therefore, processes and spaces to build shared visions are essential in agri-food systems (Sutherland et al., 2015; Bui et al., 2016). In this respect, the associated networks of relevant actors and their embedding in local policies and public action must be addressed extensively with the intention of understanding the niche-regime interactions (Ingram, 2015). Subsequently, a combination of transition frameworks seems especially useful to understand agri-food

systems in order to better nurture and foster transitions towards sustainable agro-food systems (El Bilali, 2018).

2.2. Spatial approach and the UTCF

Although the relevance of space and place and the institutional context has received limited attention in sustainability transition studies (Coenen et al., 2012; Markard et al., 2012; Truffer and Coenen, 2012), the importance of place-specificity at the local level has been especially highlighted (Hansen and Coenen, 2015). Furthermore, the role of actors in instigating, starting or accelerating transitions has only been limitedly addressed. This involves taking into account the group of local and regional actors and interactions between institutions on different territorial scales and system levels (niche, regime, landscape). In this way, the geographical dimension missing from comparative studies was exposed. In response, the field of geography of transitions emerged from work by Truffer and Coenen (2012) in order to address socio-spatial embeddedness and multi-scalarity. These authors called for a conceptual framework to undertake multidimensional, dynamic and long-term approaches in sustainability transitions. Accordingly, Raven et al. (2012) proposed a new "multi-scalar multi-level perspective", which implies a "second generation multi-level perspective" to incorporate the spatial dimension. Finally, also in practical terms, it has been recognised that every transition management project and sustainability transition study requires specific contextual factors (Hansen and Coenen, 2015) and a participatory approach. For these reasons, general formulas must be avoided (Loorbach and Rotmans, 2010; Loorbach et al., 2017).

The UTCF has been formulated to allow researchers and actors to recognise the particular requirements and assets to move towards sustainability in the global North and South. Even though capacity approaches have been mainly developed at national scales, the local scale is also emphasised. This framework also pays special attention to the large-scale processes (Wolfram, 2016). Further studies on urban transformative capacities are being developed by focusing on the acceleration of sustainability transitions through local policy designs (Roorda et al., 2014; Wittmayer et al., 2014), but not by paying attention to local enabling abilities in a preliminary state of transition (Rijke et al., 2013). This preliminary state matches the pre-development transition phase defined by Rotmans et al. (2001), which could be characterised as the status quo phase: one without visible changes (Frantzeskaki et al., 2018). In particular, under this framework, the local scale is considered to have genuine potential to reshape values, identities and power relations through experimental practice (Friedmann, 1992; Moulaert et al., 2007). Furthermore, the UTCF has been developed based on the socio-technical system approach, including insights from the MLP, and the transition management and strategic niche management approaches to offer orientation for research, policy-making and planning practice in the urban context (Wolfram, 2016). In this way, social networking and learning processes beyond niche level are also crucial according to the MLP and the strategic niche management approach (Roep and Wiskerke, 2012; Schot and Geels, 2008). Additionally, according to Wolfram (2016), these processes should be relevant for system actors that require transformative capacity to perform radical change within and across the multiple socio-technical systems embedded in urban contexts — such as that of agri-food.

For the first time, this study employs the UTCF (Wolfram, 2016) to analyse the specificities of the agri-food system of Valencia. The framework is based on the approaches and considerations presented in the previous subsection. Following the city-region classical concept as a set of subsystems spanning urban and rural areas (Vaarst et al., 2018), this framework addresses the relevance of geographical processes and interconnections among socio-technical systems in urban transitions (Wolfram, 2016; Ehnert et al., 2018). Wolfram (2016) established the UTCF in order to comprehend the multiple socio-ecological and socio-technical systems in urban contexts. This framework draws on a broad range of research and practical contributions on institutional and organisational capacity in social innovation, socio-ecological and socio-technical systems, and competitive industries. The framework was also developed from a background that considers its potential complementarities with spatial planning and transition management to accelerate sustainability transitions and changes in socio-technical systems (Loorbach and Rotmans, 2010; Roorda et al., 2014; Loorbach et al., 2017; Wolfram, 2018a). It comprehensively develops an extended conceptualisation and operational asset of ten capacities in order to understand and address transition complexity. In this context, transformative capacity means enabling change in a desired direction, which entails enabling system actors to participate in the local processes, fostering positive outcomes and avoiding negative ones.

The UTCF has already been further developed in concept and practice (Wolfram et al., 2019); in fact, it has been applied in urban regeneration socio-technical systems (Wolfram, 2018b) and in energy socio-technical systems (Wolfram, 2019) in three South Korean cities. Additionally, a special issue on the subject covers more than four hundred sustainability initiatives that have been analysed through the components of the framework (Castán Broto et al., 2019). In this regard, the utility of the framework has been observed when it comes to assessing the potential for change and the transformative capacities of a city toward sustainability transition with a clear action-oriented focus (Wolfram et al., 2019). There is also clear consensus that transitions should be managed not only by governments but by a plurality of actors (Köhler et al., 2019). In this sense, Kuenkel (2019) provide the collective stewardship concept as a transition management tool where decision-makers, researchers, planners and social activists are summoned to become stewards toward sustainability.

In particular, in this paper the framework has been used as a systemic approach to steward, encompass and enhance the transformative capacity of the agri-food system in Valencia. The framework is based on ten components and eighteen subcomponents (Table 1). The components C1 to C3 refer to agency and forms of interaction that include most of the main governance concepts. In this regard, participation processes, the active inclusion of stakeholders, leadership, intermediaries and networking emerge as crucial transformative capacity factors. From C4 to C8, the framework identifies the core development processes. These core development components are related to institutional, regulatory and path-dependence issues in order to identify not just the barriers and drivers towards sustainability transitions, but also reflexivity, learning processes and monitoring. Furthermore, prior or ongoing experiments and initiatives are considered essential to develop transformative coproduction of knowledge and social learning. Finally, C9 and C10 represent relational dimensions that affect all the other components. These last two components capture the different agency levels and cross-scale and multi-level implications in order to deal with the incorporation of the interactions between levels. All the components have been considered as co-dependent elements; therefore, balanced attention should be paid to them in order to avoid undermining transformative capacity (Wolfram, 2016). For a detailed explanation of the framework, please see Wolfram (2016) (see Table 2).

3. Research methodology

The methodological approach of this investigation was grounded in an interpretative research paradigm (Corbetta, 2006; Miles et al., 2013). In this respect, the qualitative method aimed to interpret, describe, analyse and understand the data collected through observation (Maldonado Pinto, 2018). The interpretative stance employed presupposes that the key elements of the social phenomenon under study can be addressed through the understanding of the different meanings that individuals give to it, what their position relative to the issue is, and how they interpret the processes and dynamics involved (Valles Martínez, 1997; Lincoln et al., 2011). From this perspective, reality can be subject to diverse interpretations, so adopting a critical stance implies comparing and contrasting them in order to address controversies and

Table 1

Urban Transformative Capacity Conceptual Framework Components.

COMPONENTS	DEFINITION	SUB-COMPONENTS
C1 Inclusive and multiform urban governance	Diversified, flexible and robust governance structures with a wide participation and active inclusion of stakeholders from all sectors in a diversity of governance modes and actor networks with sustained and effective intermediary organisations and individuals between sectors and domains.	C1.1 Participation and inclusiveness C1.2 Diverse governance modes and network forms C1.3 Sustained intermediaries and hybridization
C2 Transformative leadership	Polycentric and socially embedded leadership arising not only from political elites, but also from other spheres of society. A kind of leadership that enhances the role of different change agents and includes the translation between discourses (across sectors, domains, scales) and the articulation of new visions and discourses to leverage collective energies and enable social learning.	
C3 Empowered and autonomous communities of practice	Communities of practices built on the shared experience of urban place and/or joint concerns. They require association, coalition forming, access to resources and conditions of autonomy.	C3.1 Addressing social needs and motives C3.2 Community empowerment and autonomy
C4 System(s) awareness and memory	Awareness and understanding among stakeholders of the system dynamics, path dependencies and obduracies that undermine urban sustainability.	C4.1 Baseline analysis and system(s) awareness C4.2 Recognition of path dependencies
C5 Urban sustainability foresight	A collective vision of radical departure from the current path should be created, including alternative scenarios based on system thinking. Transformational knowledge must be developed through transdisciplinary co-production.	C5.1 Diversity and transdisciplinary co-production of knowledge C5.2 Collective vision for radical sustainability changes C5.3 Alternative scenarios and future pathways
C6 Diverse community-based experimentation with disruptive solutions	Practical experimentation of path-deviant initiatives in the urban setting is crucial to develop transformative knowledge and social learning.	
C7 Innovation embedding and coupling	The extent to which barriers for innovation practices are removed and its embeddedness into routines, organisations, plans and legal frameworks is enhanced.	C7.1 Access to resources for capacity development C7.2 Planning and mainstreaming transformative action C7.3 Reflexive and supportive regulatory frameworks
C8 Reflexivity and social learning	Reflexivity and learning must include all actors of change to enable positive feedback loops. This involves the application of	

Table 1 (*continued*)

COMPONENTS	DEFINITION	SUB-COMPONENTS
	reflective assessment methods, the creation of formal and informal reflexivity formats that critically question progresses and to systematically manage transformational knowledge.	
C9 Working across human agency levels	Capacity development needs to occur at different agency levels simultaneously, addressing individuals, households, groups, organisations, networks as well as society at large.	
C10 Working across political-administrative levels and geographical scales	Cross-scale and multi-level implications should be incorporated in the understanding of all the components of the framework. Interactions amongst scales and administrative boundaries must be considered.	

Source: Wolfram (2016).

Table 2

List of stakeholders selected for personal interviews.

ID	Affiliation	Stakeholder group
V1	Plataforma para la Soberanía Alimentaria del Pais Valencia	Social organisations
V2	Coordinadora Campesina del Pais Valencia — COAG	Social organisations
V3	Universitat Politècnica de València	Academic
V4	Universitat Politècnica de València	Academic
V5	Agriculture Service. Valencia Municipality	Local government
V6	Justicia Alimentaria	Social organisations
V7	CERAI	Social organisations
V8	CUINATUR	Private sector

inconsistencies (Estruch, 2003). Following on from this, the view of the researcher is necessarily partial as it is conditioned not only by their own position relative to the object but also by a theoretical framework that necessarily focuses on certain spheres of reality while blurring others. In this regard, the research design has employed a deductive approach, in which the theoretical framework was used to observe the reality of the agri-food system in Valencia, while at the same time an open attitude was developed in order to grasp emergent issues that complement the theoretical framework. This interaction between theory and actors' interpretations is a core element of the research.

In this respect, several qualitative research methods have been used to capture and understand the interpretations of the transformative capacities in the city of Valencia related to the agri-food system. In particular, following successful applications of Wolfram's framework (Wolfram, 2016, 2018b, 2019), this exploratory analysis took the form of a city case study through related document analysis, academic literature review, semi-structured interviews and participatory observation. The use of a case study arose in accordance with the idea that the correct use of a single case study may be central to scientific development, especially if it is combined with other research methods (Flyvbjerg, 2016). In particular, the agri-food issue in Valencia was viewed as significant, due to the disruptive initiatives in the city and its surrounding horticultural fields. Since 2015, agri-food initiatives have presented a

balanced leadership between public institutions, civil society/social activism and private sector initiatives. Due to these reasons, the case of Valencia was considered suitably relevant for the purpose of this study.

The research processes began with a transdisciplinary seminar in which researchers and practitioners were free to debate the research in the specific context of Valencia. The overall implications of the socio-technical system approach were discussed, as well as the conceptual components of Wolfram's framework, which were presented together with the research methodology to be defined and clarified.

Second, following previous applications of the framework in other socio-technical system case studies (Wolfram, 2019; Wolfram, 2018), primary data was gathered through semi-structured interviews with key informants and experts balanced from five different organisational backgrounds. These backgrounds were defined by the DRIFT methodology for actor analysis in transition management processes (Roorda et al., 2014): government, intermediaries, civil society, business sector, and academia. Accordingly, eight interviewees were selected according to their strategic relevance and their competence profile as frontrunners due their experience in the transition of the agri-food system in the city of Valencia. The interviews were recorded. Their duration was between one and 2 h. The interview guidelines covered general questions and the eighteen subcomponents of Wolfram's framework related to the agri-food system in Valencia (see Annex 1).

Third, the main strategic plans, policy documents and articles related to the agri-food system in Valencia since 2015 were incorporated in this study as documentary and secondary data analysis.[1] Additionally, participatory observation (Corbetta, 2006; Valles Martínez, 1997) was used in twelve local events, workshops and meetings on the topic. These events were either organised by academia, the private sector or civil society. Accordingly, opinions were systematically collected from a wide range of actors in the city in order to formulate a comprehensive vision of the agri-food system in Valencia.

Subsequently, all the information was coded by using a matrix with the subcomponents of Wolfram's framework. This summary matrix was created to confront the interviewees' considerations and the authors' perceptions. It was particularly useful in order to evaluate the strengths and weaknesses of the transformative capacity of the agri-food system in Valencia with the aim of interpreting the overall results of this research.

4. Results

4.1. Transformation process in Valencia's local agri-food policy

From the point of view of physical context or material structure, Valencia is a coastal city and the third most populated city in Spain. It has a system of fishing, marshes and traditional peri-urban agricultural production, which fragments as it enters the city (Romero and Melo, 2015). The Huerta is one of the last six Mediterranean horticultural fields in Europe, characterised by a historical irrigation system dating back to Muslim times, and is recognised as a Globally Important Agricultural Heritage System (GIAHS), (FAO, Food and Agriculture Organization of the United Nations, 2019; Stanners and Bourdeau, 1995). According to data from the last agricultural census (INE, 2009), at the provincial level of Valencia, the Huerta represents 309,172 ha of agricultural land use. This territory has a total population of 2,591,875 inhabitants (INE, 2020), where the city of Valencia constitutes the main municipality by size and population. Urban agriculture requires a treatment at different scales of the territory, and the largest scale is the metropolitan level (Nadal et al., 2015). In the case of Valencia, the metropolitan scale is used as a reference for the GIAHS territory (FAO, Food and Agriculture Organization of the United Nations, 2019), and also for the recent Law for the Protection of the Valencian Huerta, or "Ley de la Huerta", which includes a Territorial Action Plan for the

Management and Revitalisation of the Huerta of Valencia and which defines an "expanded area" of 63,000 ha, involving the historical irrigated areas of the Metropolitan Area of Valencia and the regions of l'Horta Nord, l'Horta Oest and l'Horta Sud. This territorialisation is related to the political component of the defence of the Huerta and, in the characterisation of the agri-food system, this sphere is superimposed on that of the city-region, which is much more diffuse (Cerrada-Serra, 2019). According to López-García et al. (2021, p. 5), "the urban or peri-urban character of agricultural production in the Huerta of Valencia, as well as the great importance of horticultural productions and other processed and marketed products in the territory, have been related to the potential for the development of short marketing channels and local food systems (Kneafsey et al., 2013), and would therefore be relevant for proposals for transitions towards sustainability in food systems (Gliessman, 2016)."

The socio-technical landscape contains a set of heterogeneous factors that form an external structure or context for actors' interactions (Geels, 2002). At the larger scale of the foodscape, macro-political developments and new global norms can put pressure on current agri-food regimes (Immink et al., 2013; El Bilali, 2019). The hegemonic trends characterising the foodscape are the internationalisation of agribusiness markets, speculation and trade instability, the organisation of global supply chains, and the expansion of the sphere of circulation and its resulting politicisation (Arboleda, 2020; El Bilali, 2019). In addition to these trends are the global negative impacts of the capitalist system, such as environmental crises, inequality, and climate emergency, with the agri-food system being considered one of the main culprits, as well as one of the most affected (IPCC, 2019; El Bilali, 2019).

Agroecology and food sovereignty emerge from transnational peasant movements as counterparts and alternatives to the corporate and neoliberal globalised agri-food model (La Vía Campesina, 2018). Since 2015, the United Nations (UN) has been promoting macro-policies on the Global Sustainable Development Goals (GSD), which include targets for a sustainable food system (El Bilali, 2019). The Milan Urban Food Policy Pact, which promotes food governance, and the Urban Food Programme Framework (FAOb, Food and Agriculture Organization of the United Nations, 2019), are part of these macro-policies that are alternatives to the model and involve cities as a locus of food systems regulation and a centre of mass consumption, in an effort to integrate food into urban planning (Cabannes and Marocchino, 2018). In particular, the city of Valencia signed the Milan Urban Policies Pact, taking political responsibility for promoting sustainable food policies. This event is considered a direct influence of the landscape on the local agri-food regime, as well as the global agroecology and food sovereignty movements, as a direct influence from the landscape on local niches.

To understand the process of niche development, social movements and agri-food policies in Valencia, it is necessary to go back to the urban pressure exerted there for more than 50 years, which was exacerbated at national level in the decade from 1997 to 2007 with the Spanish real estate boom (Soriano i Piqueras, 2015; Miralles i García, 2015). This generated a long process of forced expropriations, environmental degradation, major fragmentation and the loss of Valencia's traditional Mediterranean Huerta (ibid.). In 2001, in the midst of predatory urban planning, a social movement that had been developing since the 1970s became visible with the slogan "Per l'Horta" (For the Huerta), promoting the first "Popular Legislative Initiative", which proposed the regulation of the management and protection process of what remained of the Huerta of Valencia, as a protected natural area (Gómez Ferri, 2004). More than 100,000 signatures were collected; however, the proposal was rejected by the government of the day, despite meeting the stipulated legal requirements (Melo, 2018). This proposal set a precedent of great civic and organisational participation, gathering around one hundred groups and associations from all over the Valencian region (Gómez Ferri, 2004).

Ten years later, an economic, political and social crisis was unleashed in Spain that gave rise to the national movement known as

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[1] The analysed documents are included in the references.

"15-M" (15 May) or "los Indignados", which on the one hand favoured a change of government in Valencia, and on the other hand further strengthened local social movements (Fernández et al., 2018). These social movements were consolidated around the objectives of territorial protection, agroecology and food sovereignty, promoting new small-scale agricultural initiatives that seek new forms of proximity and direct sales channels with urban consumers, practising a sustainable production model (Cerrada-Serra, 2019).

In 2015, there was a change of government in the city of Valencia and in the Valencian agri-food regime, following twenty-four years under a conservative government. With the new progressive government, a window of opportunity opened (V7) for a flow of narratives from social movements to the regime in relation to the protection of the Huerta, agroecology and food sovereignty (interviewees V3–V7).

Three months later, when the new government took office, a municipal section for Agriculture, Orchards and Towns was created, defining a Comprehensive Action Plan for the Promotion of Agricultural Activity — PAIPATA (García and Moragues-Faus, 2018; Ayuntament de València, 2018). A month later, the Milan Urban Food Policy Pact was signed, with specific guidelines for the formation of a food governance space, which broadened the perspective of the municipal administration from that of the agricultural sector to that of the agri-food system (V5).

Thus, a process of transformation of Valencian agri-food policies began, in which leadership was shared between the different sectors (private, academic, social movements and local administration) (interviewees V2, V3, V5, V6, V7). In this process, there were key actors who played the role of intermediaries between the different sectors (interviewees V2, V3, V5, V7). Empowered social movements were prepared, through their pre-existing informal governance spaces, to take on the new challenge of policy co-production (V1, V3, V6, V7). These pre-existing informal governance spaces nurtured and promoted a new development group, with a high degree of social and human capital, which acted as the driving force of the process. This development group was captured by the municipal administration (intermediary) and together they carried out all the planning, management and trust-building necessary for the creation of the Municipal Food Council (CAM) and later the Agri-food Strategy. In addition, this same development group supported the lobbying for the approval of the "Ley de Protección de la Huerta", the same "Popular Legislative Initiative" that had been rejected for seventeen years (interviewees V3, V5, V7). Based on this law, there are three important lines of work at supra-municipal and metropolitan territorial level: 1) the Plan de Ordenación Territorial de la Huerta (Generalitat Valenciana, 2018); 2) the Plan de Desarrollo Agrario; and 3) the Consejo de la Huerta, which includes the articulation at supra-municipal political-administrative level and the participation of social movements.

The CAM was formalised in 2018, with the representation of some 60 organisations including civil society, the private sector, academia, institutions and representatives of members of each political party (Valencia City Council, 2016; V3, V5, V7). Referring to the formation of the CAM, one interviewee says: *"The first Food Council of the Spanish State has been created in the city of Valencia; it is the only one that has materialised, the others are in process …"* (V1), referring to the fact that other cities in Spain have also signed the Milan Urban Policy Pact and are in the process of forming their food governance spaces. Furthermore, in 2018, the CAM approved the "Valencia 2025 Agri-Food Strategy", with guidelines on agro-ecological transition, local food economy, responsible food culture, local food governance, the right to food, and territorial food planning (Ayuntament de València, 2018) (see Fig. 1).

In pursuit of these transition processes in the agri-food system, Valencia was recognised by the FAO as World Food Capital and joined the Cities for Agroecology Network in 2017 (García and Moragues-Faus, 2018; Ayuntament de València, 2018). In 2018, the city of Valencia signed the "Intervegas Pact" for food sovereignty, environmental education and sustainable development (ibid.).

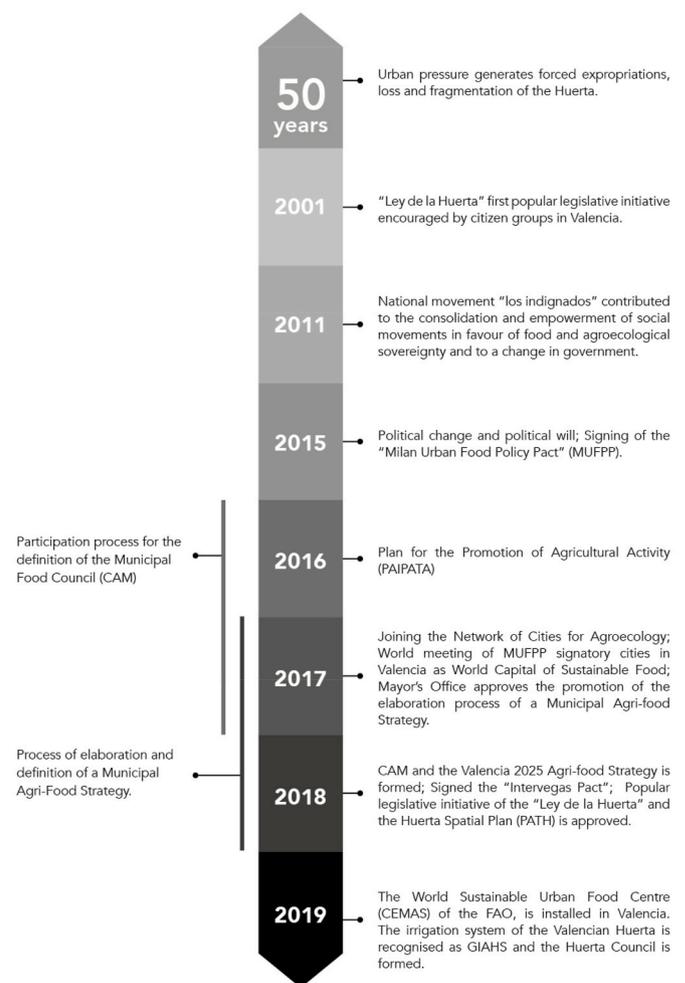In July 2019, the FAO Global Centre for Sustainable Urban Food

Fig. 1. Timeline of agri-food policy transformation processes in Valencia. Adapted from the Agri-food Strategy 2025 (2018).

(CEMAS) was established and inaugurated in Valencia and, in November of the same year, *La Huerta Mediterránea Valenciana* was recognised as a Globally Important Agricultural Heritage Site (GIAHS).

Throughout the process, the political leadership has adapted well to the new challenges posed by social media — a fact that was recognised by most of the interviewees. Nevertheless, both the reflection and the planning and management for the realisation of the food governance space, among other sustainable initiatives, have been driven, supported and realised by social movements and niches. "There is an organised social mass in the region, with years of experience and work, capable of facing the new challenge." (V3).

It is important to mention that this whole process of building governance and sustainable agri-food policies in Valencia has taken place in an agri-food regime dominated by agro-industry and agro-exports, with conventional monoculture management. In the metropolitan context, there are mostly family and extensified farming profiles (López-García et al., 2021).

López-García et al. (2021) analyse three pilot projects of non-deterministic agroecological dynamisation in the Huerta of Valencia between 2014 and 2019, where they state that the transition from industrialised agri-food systems to more sustainable systems is a complex process, with obstacles ranging from the rigidity of the conventional farmer's discourse regarding transition, to multi-dimensional and multi-scale factors. However, understanding transitions as open-ended processes allows for the integration of diverse actors in processes of action-reflection-action that build common horizons .

The incipient process of change in Valencia's agri-food policy reveals part of the complexity of the interactions between different actors and levels over time. Considering the relationships and patterns found in the triangulation of sources and techniques, three milestones stand out that, in coordination, trigger the development of a series of key capacities or components for the transition in Valencia (see Fig. 2).

The three milestones triggering transitional capacities interact at different levels: at the niche level, empowered social movements; at the regime level, the change of local government after twenty-four years of rule by a right-wing party; and at the landscape level, the signing of the Milan Urban Agri-Food Policy Pact. It should be noted that these levels do not have agency per se; however, actors and their actions can often be associated with certain levels (Fischer and Newig, 2016; Grin et al., 2010).

The coordinated emergence of these three milestones marked a turning point in Valencia's agri-food policies and in the development of capacities for agri-food system transformation.

4.2. Valencia's agri-food system under the lens of the UTCF

C1 Inclusive and multiform urban governance. This component is the central core of the UTCF. It was considered to be strongly developed in Valencia by most of the interviewees (V1, V2, V5, V6, V7), with diverse spaces (at least seven identified) and modes of food governance (C1.2), formal and informal, with participation of different sectors and at different scales. The CAM was the most prominent, both for its formality and its high participation and Inclusiveness (C.1.1). *"… Inclusiveness, it's quite … the range is quite wide. Surely we have left some out, but it's not a closed process; they can be integrated, it's in continuous evolution."* (V6). In the sub-component of sustained intermediaries and hybridization (C1.3), opinions were more divided. However, key hybrid intermediary roles were identified within the governance shaping process, but with difficulty in fulfilling their role on a larger scale. *"There is a need for such a strong role, a referent entity or person."* (V3). According to Wolfram (2016), these sub-components (C.1.1–C.1.3) would determine effective governance; however, in the case of CAM, both because of its recent formation and the reduced agri-food competences at the local level (V7), the effectiveness of the main food governance space in Valencia is questioned.

C2 Transformative leadership. Theoretically, transformative leadership articulates visions and, at different scales, is distributed across various sectors — private, social, administrative, academic and political — with a commitment to systemic change for sustainability (see more in Wolfram, 2016). These characteristics were described by most interviewees, but they did not mention transformative leadership. On initial consideration, interviewees commonly associated the concept of leadership with a pyramidal hierarchy that falls on one person or sector,
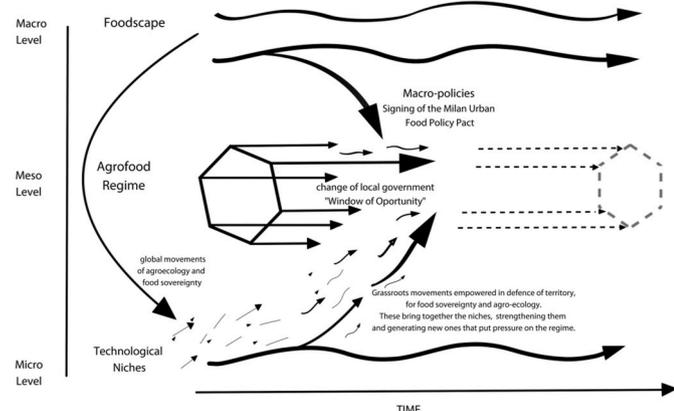
with a focus on public policy.

"… I don't believe much in leadership, as much as in competition; it's a dynamic … for the masses, yes … but I don't see leadership as a positive dynamic … with the strategy of the development group, we have achieved more … creating a powerful consensus environment, with enough influence capacity, more than if there had been one person." (V5).

Leadership in Valencia is strong and shared among different actors; they fulfil hybrid roles, also functioning as intermediaries who move from social activism to institutional roles. This is in line with the relational dynamics described by Wolfram (2019), which describes forms of agency that effectively achieve institutional change, such as transformational leadership, involving actors who occupy multiple positions, shift positions and/or develop boundary relationships (Grillitsch, 2017; Fischer and Newig, 2016). Conversely, when all key stakeholders do not develop these forms of agency and interaction, the capacity for urban transition and real change necessarily remains limited (Newton et al., 2017).

C3 Empowered and autonomous communities of practice. There are communities of practice with diverse characteristics. According to two of the interviewees, they *address social needs and motives* (C3.1), but only from a small group of people concerned with agroecology and food sovereignty (V4, V5). In relation to *community empowerment and autonomy* (C3.2), there are communities of practice of an autonomous and empowered nature, with the following examples standing out: the Plataforma por la Soberanía Alimentaria del País Valencia, Asociación de Agricultores COAG, the consumer groups, the urban vegetable gardens, the Sistemas Participativos de Garantía Agroecológica, and the Centros de Madres y Padres de las Escuelas opposed to the school canteens.

C4 System(s) awareness and memory; *Baseline analysis and system(s) awareness* (C4.1); *Recognition of path dependencies* (C4.2). This component and its sub-components are a weakness that became more noticeable in the early stages of the formation of the CAM. Although the same process assisted in an understanding of the baselines of the system, they have not been worked on in this space in a formal or organised way *"… it happens that food is not internalised in a systemic way"* (V3). However, at the level of the development group, there is systemic awareness and analysis of path dependencies. According to the data from the respondents (V1, V5, V6, V7), work of this kind (C4.2) has been done on a small scale.

C5 Urban sustainability foresight. Diversity and transdisciplinary co-production of knowledge (C5.1) was assessed as a strength; however, although the *collective vision for radical sustainability changes* (C5.2) is present in a minority of groups — namely social movements, the development group, experimental communities and niches — it does not transcend to the majority of actors. *Alternative scenarios and future pathways* (C5.3) are analysed from informal spaces, at the level of the Platform for Food Sovereignty and the development group; the latter, whose work is reflected in the Agri-food Strategy, enjoys the unanimous democratic approval of the CAM.

C6 Diverse community-based experimentation with disruptive solutions. Various sustainable disruptive initiatives are identified, with a greater preponderance of collective initiatives than individual and private ones (V7, V8). The Plataforma de la Soberanía Alimentaria del País Valenciano, currently groups and maps on its website a total of 257 initiatives in the Valencian community — including organisations, local markets, shared bakeries, and consumer groups — working for food sovereignty. The interviewees highlighted the leap in scale from consumer groups to cooperative supermarkets, urban gardens, Participatory Guarantee Systems, sustainable catering companies connected with agro-ecological farmers' cooperatives, and initiatives focused on school canteens.

C7 Innovation embedding and coupling. According to the background and the assessment of the interviewees, this is a weak component, as there is low access to resources for *capacity development* (C7.1), both for

Fig. 2. Multi-level perspective of agri-food in Valencia. Adapted from Geels (2002).

promoting innovation in the agri-food sector and for planning and *mainstreaming transformative action* (C7.2). However, through CAM, the Agri-Food Strategy needs to be provided with plans, programmes and budgets promptly (V7). *Regarding reflexive and supportive regulatory frameworks* (C7.3), the institution's processes for adjusting regulatory frameworks that support innovations are slow and bureaucratic (V3, V5, V7, V8). *"There have been no ideological barriers in recent years, only formal and bureaucratic barriers, and if there were no follow-up capacity and self-financing capacity behind to drive these processes and push the administrations, it would be very difficult."* (V7).

C8 Reflexivity and social learning. This component is identified as weak in the agri-food system, mainly because of its incipient work and development at the CAM level.

> *"These spaces are not happening … These spaces are happening at the ESPAI,*[2] *where we question ourselves and see where we are failing, but they do not have these spaces because they do not find places to replicate them."* (V3). *"Currently, the Agri-food Strategy is being monitored in a formal way, with facilitators, they meet with the different organisations, through working groups. We have only recently started to do this."* (V2).

C9 Working across human agency levels. Work and actions for a change of food model towards sustainability were identified at different levels, considering the different components. Some examples at the individual level include there being an increase in ecological consumption and production: *"… going back to the cooperative supermarket, they have been operating for ten months and we already have five hundred members and not even 10% of them are militants, but they have joined from the private sector."* (V7) (individuals/households). At the level of families and households, there is also the school canteens project (V1–V6–V8): *"We have noticed recently that parents are demanding the provision of healthier and more sustainable food options from school management"* (V8). At the production area:

> "A lot of young people are joining the organisation and almost all of them have agroecology projects. I have seen it in the union and at a general level in the countryside. I see more and more interest in agroecology, in not polluting with agrochemicals. And in export agriculture they are also asking for the non-use of agrochemicals." (V2).

At the neighbourhood level: *"… the urban gardens I know are linked to the neighbourhood … they have an unrivalled neighbourhood organisational network."* (V6). There is also work at the level of other organisations and networks (e.g., cooperatives, local markets, associations, NGOs, Red Ciudades por la Agroecología, etc.).

C10 Working across political-administrative levels and geographical scales. There is a consensus among most interviewees that this component is one of the weakest, as there is a clear lack of administrative and political coordination at both horizontal and vertical levels. Although there are efforts that have borne fruit, such as the "Ley de Protección de la Huerta" (Law for the Protection of the Huerta), from which the Huerta Council is soon to be formed at the metropolitan level, instances that aim to achieve coordination and governance around the Huerta on a larger geographical scale are lacking.

5. Discussion

5.1. Triggers and capacity flow

5.1.1. The pre-scenario and the emergence of capacities for transition

The actors most involved in the incipient process of transition of

Valencian agri-food policies are the alternative and empowered social movements who have generated informal agri-food governance spaces (C1), promoted networking, reflection and social learning (C8), elaborated a vision of radical changes for sustainability (C5.2), contributed to the formation of intermediaries (C2) and promoted sustainable disruptive agri-food initiatives (C6). These informal spaces have nurtured the whole subsequent process of shaping formal governance. Rijke et al. (2013), in their research, suggest the need for informal, decentralised governance in the early stages of adaptation and transition, and subsequently implement formal, centralised governance to adjust or establish legislative frameworks in more advanced stages of the transition. This is in line with *C1 Inclusive and multiform urban governance* as stated in the UTCF. Nevertheless, behind this informal governance, there is a fifty-year process of civic engagement with the protection of the Huerta, a slow process of social cohesion, where civil society organisations contributed to the strength of social capital (Pesch et al., 2019), as well as to the development of sustainable disruptive initiatives that shaped niches. This point can be glimpsed in the UTCF, through *C3 Empowered and autonomous communities of practice*, identified as an accelerating component of transition. However, in studies of socio-technical transitions, they remain focused on the design of local government processes to accelerate urban change (Roorda et al., 2014; Wittmayer et al., 2014), not on their broader enabling conditions at a "pre-development" stage (Rijke et al., 2013; Wolfram, 2016). Capacity concepts related to what is being discussed here can be found within social innovation studies (Seyfang and Haxeltine, 2012), in which the appropriateness of considering a social movement as a grassroots innovation and socio-technical innovation niche is discussed. Seyfang and Smith (2007) say that unmet social need is not the only grassroots driver; ideological commitment to alternative ways of doing things is another. Such ideologies go against regime hegemony and develop some practical grassroots innovations based on reordered priorities and alternative values (ibid). In Valencia, the ideologies of agroecology and food sovereignty were adopted fifteen years ago, from the landscape, evidencing the connectivity between the global and local scale. This connection was also observed through the influence of globalised capitalism and the dominant individualistic and consumerist lifestyle aspirations, which run counter to the communitarian collectivism (Seyfang and Smith, 2007) that characterises alternative visions of agro-food niches. In this case study, there are also other visions of radical changes from the private sector, which focus on people's well-being. They do not have a collective character, but they have a strong social commitment which fits within the social and solidarity economies (Radrigán, 2008). These latter sustainable disruptive initiatives, coming from the corporate world, do not fit in with the issues of identity, belonging, purpose and community, which are fundamental to engage and retain participants (Seyfang and Haxeltine, 2012), and are discriminated from the alliances and networks that make up social movements.

> *"Public-private participation is very difficult, on both sides, because they think that we companies are only here to make money and it can be interpreted that there are vested interests … I understand that the public-private union should be more fluid. And it's the same between social collectives and private enterprise; it is also very complicated. We are not allowed to participate. Instead of seeing that we can contribute an important vision, they are very closed."* (V8).

5.1.2. The trigger for capacity building and capacity development for transition

The signing of the Milan Urban Policy Pact is the second milestone identified as a trigger for capacity building, showing how landscape-level agri-food macro-policies influence the city transition. This protocol includes a progressive framework of thirty-seven actions, where the first of six areas is food governance, promoting the process of setting up an *inclusive and effective food governance space* (C1) in Valencia — the

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[2] *The Agroecological Advocacy Space (ESPAI), an informal organisation, recognised as a key development group (within this article) made up of NGOs, a university chair and the local administration.*

first to be established in Spain. In the short term, this generated a change in the local administration's sectoral view of "agriculture" to that of "agri-food system", which involves more complexity and integrity and more relevance when it comes to implementing sustainable policies. Undoubtedly, once triangulated information is obtained from the twenty-nine Spanish cities that have signed the Milan Urban Policy Pact (MUFPP, 2020), it will be possible to obtain more rigorous information on the impact of this international protocol, as a trigger of capacities for the transition to sustainability. However, it is postulated here that it is the three milestones together that generate a development and flow of capacities — in an interdependent and coordinated manner — not just one alone.

5.1.3. The window of opportunity for the flow of skills for transition

The signing of the Milan Urban Food Policy Pact was made possible by a change of government, with ideas in line with the demands of the agri-food social movements. It has been identified as the third milestone at the regime change level, although social movements provoked the previous emergence of some capacities. Before the change of government and the signing of the Milan Urban Food Policy Pact, the agro-ecology and food sovereignty niches were under the umbrella of a local social innovation network, with little acceleration. However, more inclusive governance processes (C1), through CAM, have generated synergies between new and diverse actors (V3, V5) that seem to be accelerating the transition processes through the strengthening of existing transition capacities and developing new ones, such as shared leadership (C2), and the incipient integration of new legal frameworks for coupling innovation (C7). In addition, there is a potential in the development of further capacities through CAM, such as systemic awareness (C4), social reflection and learning (C8), and collective sustainability vision (C5.2). The political will of the local government, working hand in hand with the development group, are key to bringing these agreements to fruition. However, due to the complexity and uncertainty inherent in any social transition, transition pathways are diverse and are unlikely to have a continuous, progressive and linear order over time; therefore, transition theory emphasises that social changes are not linear processes (Frantzeskaki et al., 2018).

5.2. Assessment of transitional capacities in the agri-food system of Valencia

According to the assessment of the transitional capacities of the Valencian agri-food system, "innovations are still isolated, fragmented and poorly integrated (V3, V4, V5, V8) and not sufficiently developed to compete with the existing regime". These characteristics coincide with the literal description of the pre-development stage, described in the model of the transition phases by van der Brugge and Rotmans (2007). This is reinforced by the component evaluations (C7) in which there was agreement among the various actors that the integration of innovation is weak, slow and incipient. On the other hand, disruptive initiatives (C6) begin to act as an alteration of the status quo, highlighting the CAM as a space for agri-food democratisation and the Agri-food Strategy — as its first outcome — with agroecological-based approaches, agri-food sovereignty, and new alternative paradigms to the agri-food regime. In shaping effective governance (C1), the central roles played by transformative leadership (C2), communities of practice (C3) and intermediaries (C1.3) were highlighted as key forms of collective agency that mutually reinforce capacity growth (Wolfram, 2016).

5.3. Potentials and limitations of the framework as an analytical tool

The UTCF, with its holistic characteristics, generated the necessary inputs for the analysis of Valencia's agri-food policy change process with the Multi-Level Perspective, showing great synergy between frameworks (UTCF-MLP). Furthermore, the assessment of transformative capacity through the UTCF is limited to a snapshot of what is happening in the

territory, through the conjunction of visions and interpretations of a representative group of actors in the system. Therefore, it may be pertinent to repeat the evaluation in a more advanced period of the city-region to complement the information on the transition processes. This limitation was countered by the MLP, which made it possible to look back in time and elucidate the processes of emergence and flow of capacities, together with the different interactions between levels. Seyfang and Haxeltine (2012) conclude on the need for a theoretical framework that better describes the factors affecting the emergence and growth of social innovations. One such contribution is presented here; however, further case study work will be needed to guide future discussions.

In the interviews conducted, the focus was always on the accelerator components of the transition and their degree of development in Valencia. The UTCF was a flexible and useful tool to identify strengths and weaknesses, which need to be improved for local agri-food transitions towards sustainability. Preliminary results were delivered in a policy brief to the interviewed actors, with the idea of obtaining feedback and also as a working basis for a future transdisciplinary workshop. The results generated through the application of the UTCF are a potential input for discussion and reflection with stakeholders, in participatory and transdisciplinary spaces, contributing to learning the capacities of the local agri-food transition, where the role of the researcher becomes more active — as a facilitator, bringing research closer to action.

5.3.1. Beyond the city. The urban-rural link

The analysis of the agri-food system highlights the paradox of labelling transitional capacities as urban, which perpetuates the invisibility of rural areas. Rural areas establish the natural, economic and social bases of food production, and provide a territorial idiosyncrasy. The cultural and traditional values of the Valencian Mediterranean Huerta were dismissed and influenced by a productivist vision of "modernity" associated with industrialisation and urbanisation. This provoked a dynamic of dominance and disconnection between the urban and the rural. On the other hand, social movements in defence of the Huerta generated an awareness of territory (urban-peri-urban and rural) and adopted a new paradigm of sustainable food, based on agroecology and food sovereignty.

It is undeniable how much the urban sector, as a centre of convergence of human activity and therefore also of policy, legislation and spatial planning, can contribute to local and agri-food development. Nevertheless, it is also important to recognise that rural communities have a more sustainable lifestyle and alternative to the hegemonic model. The environmental context of rural areas, if well managed (agroecology/biodiversity), contributes to the balance of the ecosystem that sustains life, as well as contributing to their cultural heritage. According to Kooiman (2005), systems only "see" what they can interpret from their point of view, including communications from outside. Therefore, we get partial visions of the agri-food system if we only take into account the point of view of a few urban actors. According to transition studies, power and domination dynamics need to be changed through inclusive governance, which is manifested in Wolfram (2016) framework, as a central component for capacity development. In the case of the agri-food system, agency goes beyond urban actors, extending to rural actors. According to the evaluation of the transition capacities of the agri-food sector in Valencia, component C10 "Working across political-administrative levels and geographical scales", was assessed as weak. The Agri-food Strategy proposes "to build a sustainable agri-food system, in which community-territory ecosystem relations (urban, peri-urban and rural) are established on the basis of balanced, socially just and environmentally sound relations". The interviewees approached mentioned producers, their socio-economic vulnerability and their communities of practice and sustainable disruptive initiatives. They also discussed the challenges of agroecological transition for conventional producers and the difficulties in ensuring their participation in CAM assemblies, highlighting their role

as key agents of change in the food system. All these elements highlight the importance of positioning research from the city-region or from the agri-food system, including the role of rural actors, in order to promote a profound paradigm shift and not continue to reproduce patterns of duality and domination. According to our observations, it is pertinent to include the rural-urban link in the UTCF within the components of agri-food transformation capacities, taking into account their complementary and interdependent relationship within the agri-food system.

6. Conclusions

The UTCF, designed to evaluate the capacity for transformation to sustainability of cities and nations, was a flexible and useful tool to identify the strengths and weaknesses that should be improved and addressed in the specificity of a local agri-food system. During the process, the necessity of adjusting its urban imprint became evident; i.e., the need to position the research beyond urban actors, from a city-region perspective that also involves rural and peri-urban sectors, recognising the key role of rural actors in the transitions towards agri-food sustainability. It is essential to recognise the complementarity and interdependence between the rural and the urban within the agri-food system in order to promote profound paradigm shifts and stop reproducing patterns of duality and domination. Therefore, in future evaluations of urban or neutral agri-food transition capacity, it is proposed to explicitly include the urban-rural link as a subcomponent to be studied. The results generated demonstrate the applicability of the UTCF to the agri-food system and confirm its potential use to prioritise action and as working tool for reflection (individual/collective-transdisciplinary) and social learning to support the transition to sustainability.

The merging of the MPL and UTCF frameworks allowed a deep examination of the enabling conditions for the emergence of the agri-food transition capacities that the UTCF operationally proposes. A baseline was identified to develop the capacity for transformation that resides in empowered social movements, which generated fundamental capacities such as: empowered communities of practice and informal governance spaces in which learning and social reflection occur, with a vision of radical changes for sustainability. In addition, these informal governance spaces promoted the formation of intermediaries and fostered niches, around paradigms of agroecology and food sovereignty. Furthermore, it was identified that the change of government in 2015 worked as a window of opportunity, allowing the flow of capacities from the niche to the regime and also from the landscape to the regime — the latter, through the signing of the Milan Urban Policy Pact. This international protocol was seen as a key trigger for effective formal and inclusive governance in Valencia, which deployed shared leadership, as well as the incipient development of new legal frameworks supporting the integration of agri-food innovation. The three prominent milestones — empowered social movements, a change of government in favour of niche narratives, and the signing of the Milan Urban Policy Pact — functioned interdependently in Valencia as triggers for transitional capacities in the agri-food system.

The city-region of Valencia has a high potential for transforming the agri-food system. It has favourable characteristics for the development of short marketing channels and local food systems (López-García et al., 2021). It also has important social roots and idiosyncrasies associated with the Huerta of Valencia. Through the UTCF, a strong development of accelerator components was identified, associated with key forms of collective agency that mutually reinforce the growth of transformative capacity (Wolfram, 2016). However, significant progress still needs to be made in various accelerator components, such as in the vision of collective sustainability, social learning and collective reflection, and the articulation of political-administrative levels, among others. The agri-food system in Valencia is in an incipient process of transition. Agri-food innovations are still isolated, fragmented and poorly integrated, and not sufficiently developed to compete with the regime.

CRediT authorship contribution statement

Nancy Sarabia: Conceptualization, Methodology, Investigation, Data curation, Writing – original draft, Writing – review & editing. **Jordi Peris:** Conceptualization, Methodology, Writing – original draft, Methodology, Writing – review & editing, Supervision. **Sergio Segura:** Conceptualization, Writing-Theoretical Framework and Writing-Original Methodology.

Declaration of competing interest

The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

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Appendix A. Supplementary data

Supplementary data related to this article can be found at https://doi.org/10.1016/j.jclepro.2021.129228.

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